RA Ecosystem Partner Solution
Voice Recognition Solution

RENESAS RA
READY

Solution Summary

Voice recognition and user interface is becoming an important feature for today's new digital devices. Renesas provides a voice recognition solution which does not need to connect to the internet, can help users make highly functional and differentiated products using AMI voice commands, TMC beam forming and noise suppression technology, and are ready to use with the Renesas RA family of MCUs.
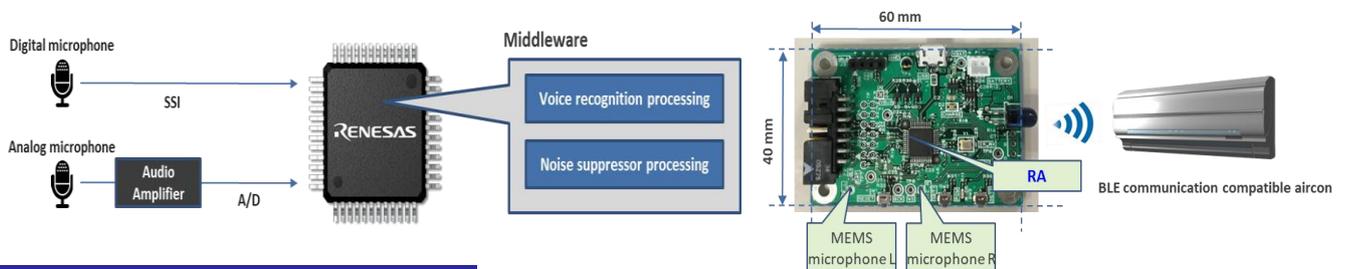
Features/Benefits

Enables voice recognition at low clocks, small memory size compared to conventional products, without the need for an internet connection.

- ・Beam forming
  - Accurately identify the target sound and reduce background noise
  - Utilizes two non-directive microphones
  - Configurable strength from "1: weak to 7: strong"
- ・Noise suppressor
  - Noise reduction rate max 30dB (about 1/30)
  - Configurable noise reduction rate by frequency band
- ・Control via BLE(RL78/G1D) module
  - Ability to control products which support the BLE protocol
- ・ Available to start evaluation and development immediately
  - Ready to provide H/W and sample S/W for evaluation/development

Diagrams/Graphics

Implemented by A/D converter or SSI (Serial Sound Interface) and middleware

Target Markets and Applications

- ▪ Smart Home
- ▪ Building Automation
- ▪ Office Automation

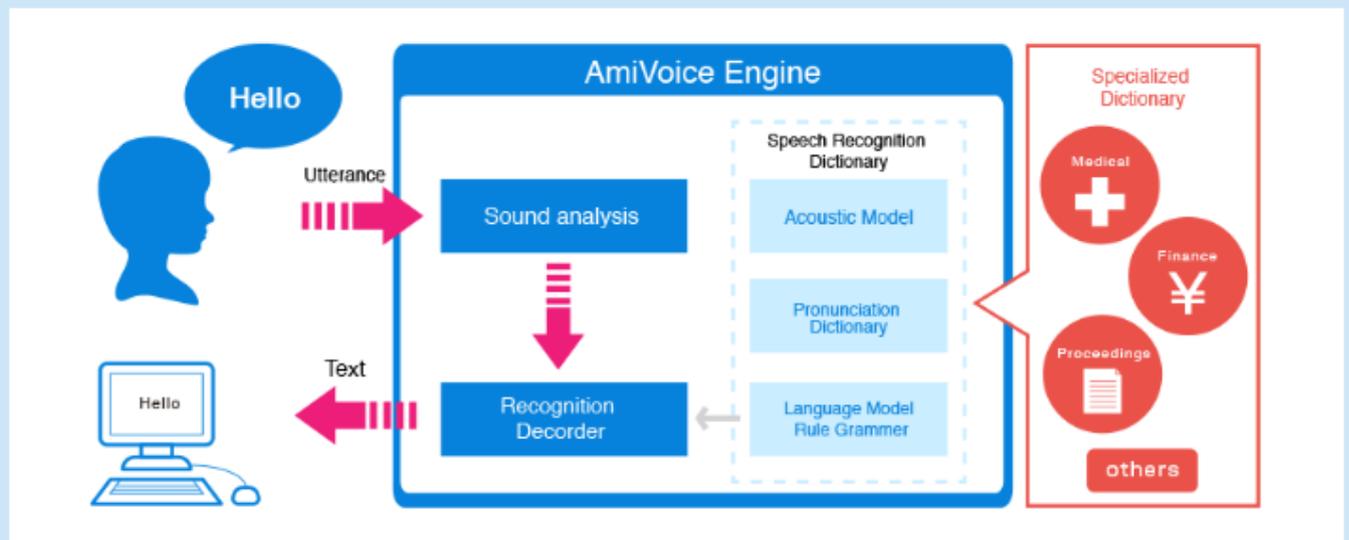2019.10

Advanced Media, Inc.

About Speech Recognition

Write by Voice, Move by Voice
A new style of human-machine communication

For most people, talking is the easiest way to communicate. Compared to conventional, restricted interfaces such as keyboards or buttons, voice recognition technology is enabling a more human form of communication.

Basic Voice Recognition Mechanisms

During the course of a normal conversation, we recognize other people's voices and understand their meaning-it all seems very easy. However, there is a great deal of speech variation, even when people are saying the same thing, due to factors such as the speaker's gender, verbal mannerisms, and choice of words. As a result, accurate speech recognition is no simple task for a computer.

The voice recognition process consists of a complex combination of language data and voice data to execute text conversion.

Features of AmiVoice

Anytime, Anywhere, Anyone

AmiVoice is equipped with world-class voice recognition technology that can be functionally incorporated into a wide variety of services in close concert with business activities and day-to-day living.

TMC Techno Mathematical Co., Ltd.
■ Algorithm Specialist

Product/Service

Zoom Voice Software

Summary

- Zoom Voice Software enables to enhance speech from the front direction with suppressing ambient noise.

Specifications	· Sampling rates:8kHz, 16kHz, 44.1kHz, 48kHz · Input data format:16 bit linear PCM · Output data format:16 bit linear PCM · Noise suppression level:max. 16dB (approx. one sixth) · Original zoom voice algorithm · enhances speech from the front direction only · low cost two non-directional microphones solution << Applications >> · digital still camera, camcorder, IC recorder, smart phone, cell phone, intercom and more
Performance	· real time processing

Product/Service

- Complete Products
- LSI /board
- Audio
- Video(SW)
- Video(HW)
- Still image
- Voice
- 1-seg.
- Multimedia BC
- Windows Media
- Noise suppression